

HYBRID COLLABORATIVE DELIVERY TEAM/ INTEGRATED PROJECT DELIVERY DOCUMENTS SUBMITTAL PROCESS



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General Description

These guidelines are for all Commercial Projects that have qualified to be reviewed and permitted, with the Hybrid Collaborative Delivery Team (HCDT), in accordance with the North Carolina Law and Administration Code Section 106.2.3.1 for Building Information Modeling-Integrated Project Delivery. The HCDT services commercial projects within Mecklenburg County, including Charlotte and the incorporated towns of Cornelius, Huntersville, Matthews, Pineville, Mint Hill, and Davidson. For other commercial projects that do not qualify for this permitting service, refer to the [Plan Submittal Guidelines for Commercial Projects](#).

NOTE: The towns of DAVIDSON, HUNTERSVILLE and CORNELIUS perform their own zoning review. Customers shall have their Building Permit application forms signed off by the specific town's administrator prior to the plans being submitted for review.

Davidson: (704) 892-5131; Cornelius: (704) 892-6031; Huntersville: (704) 875-6541.

Definitions:

1. **Building Information Modeling (BIM):** a computerized model that replaces the traditional 2D layers of building construction document information, with 3D modeling technology. BIM is used by owners to design facilities and virtually simulate the constructability of buildings, as well as manage maintenance and long term use of buildings.
2. **Integrated Project Delivery (IPD):** an approach to design and construction that has the entire owner's team (architect, engineer, contractor, key subs, et al;), working together in a collaborative fashion. This collaborative approach normally starts at the project conception to create the best design-building value for the owner.
3. **Hybrid Collaborative Delivery Team (HCDT):** is a team of Building Code Officials, within Mecklenburg County Code Enforcement, that have been created to work with 3D modeling (BIM) and the IPD process.
4. **Electronic Plan Management (EPM):** the Electronic Plan Management (EPM) system is a work flow tool that allows architects, engineers, and designers the ability to oversee their projects through plan review and permitting, electronically. All HCDT plan review applications are required to be submitted through EPM to obtain a plan review appointment.
5. **"Umbrella" Permit:** the Code Enforcement Official (CEO) may issue a single permit, based on the initial project description and code compliance strategy agreement. This issuance of permit is in accordance with the North Carolina Law and Administration Code Section 106.2.3.1 for Building Information Modeling-Integrated Project Delivery.
6. **Iteration:** a cyclical process consisting of model updates or deliverables that facilitates the review of projects.
7. **Deliverables:** the first review of phases or components of a project that need approval prior to construction, such as Footing and Foundation, Shell and Core, Interior Upfit etc. Deliverables are required to be at LOD 300 or above.
8. **Model Updates:** consists of changes to a model or drawing that has been previously approved and requires a plan review, i.e. design, customer, contractor, field changes or other changes requested by code officials.
9. **Field Comments:** any revision requested by inspector at the construction site. Some revisions can be handled on site, and others may require plan review.

10. **Interactive Status:** A process of addressing plan review comments during an iteration submittal.
11. **Owner/ Contractor Comments or changes:** any revisions requested by owner or contractor, i.e. value engineering.
12. **DWF Files:** Design Web Format (DWF) 2D files extracted from BIM models that contains design data.
13. **NWF, NWC, NWD files:** Navisworks file format used to export the 3D model.
14. **Level of Development (LOD):** a term used to describe the clarity of the content of Building Information Models (BIMs). See attached "Level of Development Specifications" documentation.
15. **Dropbox:** a cloud service used by Mecklenburg County to upload and share files.
16. **Validation Review:** final check of documents to ensure model and construction documents match the actual construction, prior to an issuance of a Certificate of Occupancy (CO).

Background of the Hybrid Collaborative Delivery Team

The Hybrid Collaborative Delivery Team (HCDT) is a permitting and inspection team created to work collaboratively with the owner's project team in a specialized approach called Integrated Project Delivery (IPD). This team and service approach will consist of engaging the Code Enforcement Officials (CEO) on a project much earlier than the non-IPD projects and they will stay involved through all phases of the project i.e. design, fabrication and construction. The team of CEO's assigned to the project will conduct both plan review and inspection thereby minimizing any field related conflicts that may arrive due to unfamiliarity with the plans.

The Hybrid Collaborative Delivery Team uses the highest technology in design and construction, such as Building Information Modeling, to provide plan review and permitting services. Consequently, projects will not follow the typical design-bid-build (D-B-B) process format.

Projects that Qualify for the Hybrid Collaborative Delivery Team's BIM/IPD Review Process.

Customers who wish to use the BIM/IPD review and permitting process will need to contact the Hybrid Collaborative Delivery Team (HCDT) division, within Mecklenburg County Code Enforcement. The Hybrid Collaborative Delivery Team will determine whether a project qualifies for the HCDT review and permitting process. Criteria for eligibility include:

- A General Contractor will be in place, as part of the project team during preliminary review.
- There needs to be an agreement or contract between the owner, and the owner's team (Architects, Engineers, General Contractors, etc.,) that allows for integrated project delivery (IPD).
- The owner's team will be willing to work using a BIM platform to produce construction documents.

There may be instances that a project does not meet all of the aforementioned criteria. It is important for the client to contact the Hybrid Collaborative Delivery Team, with project specific information. Based on the project information, the HCDT will determine if a project can still qualify for the HCDT plan review and permitting service.

HCDT Submittal Requirements for Plan Review and Permitting Overview

1. **Mega Accounts:** HCDT's project services will use the Mega Account system for permit and plan review fees. In order to qualify for the Mega Program, Mecklenburg County Code Enforcement requires that a bond account be established. This account is a Land Use Bond Account through the LUESA Revenue Collection Department. For information on setting up a bond account, [click here](#).

The owner, general contractor, lead designer or lead design firm may create this account. If there is an existing bond account, it is the responsibility of the account holder to notify the HCDT Coordinator (Cheryl Scott-Parker at 704-533-2905), for the account to be used for payment of fees.

The Mega Account can be set up after the initial Project Scoping Meeting, with the review team. However, the bond account must be in place prior to any future meetings or scheduling of projects.

2. **Fees:** Customers will be invoiced monthly for Mega Project fees. If an account is not current and charges cannot be billed to the account, further meetings and plan reviews will not be scheduled until the account is in good standing. Detailed billing information will be available from Revenue Collection upon request.

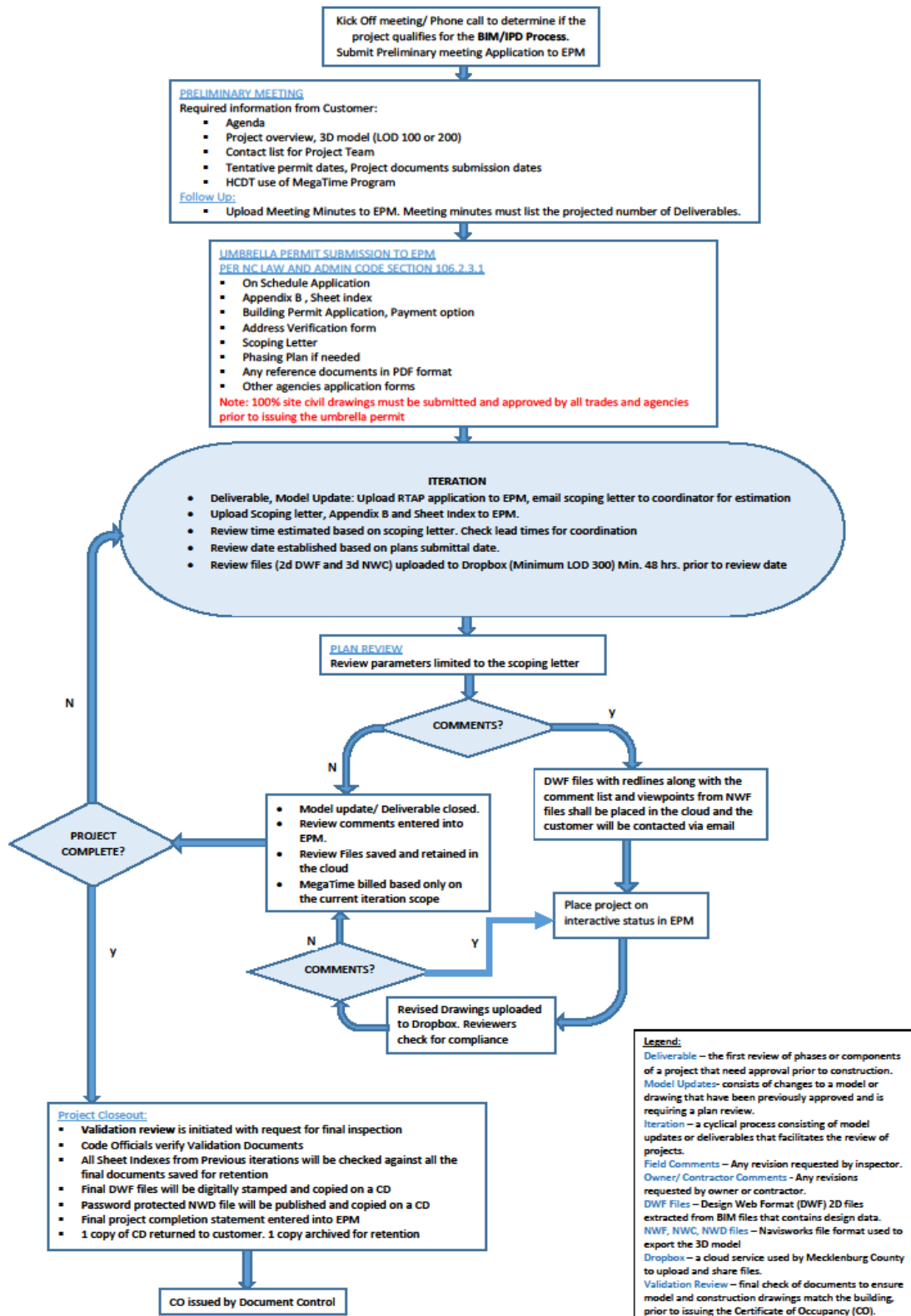
An hourly charge of \$145.00 per hour will be assessed for the time associated with staff, pre-review, review, phone conversations, owner/designer/contractor requested meetings, or other administrative duties by the reviewer on the project. If necessary, management time spent for project meetings, preliminary code reviews, plan review, or other problem resolutions will require a separate hourly fee. Additional fees will be charged to the project account for attorneys or consultants required by Code Enforcement to resolve specific issues with a project. The hours will be billed in half-hour increments. Plans Examiners will track time dedicated to the review of the project daily.

3. **Interior and Total Demolition Permits:** Total Demolition Permits must be obtained prior to the demolition of any existing building or structure located in the city, towns or county. The HCDT will issue all demo permits for all HCDT projects. An On-Schedule Application is required to be submitted through the EPM System to obtain a Demo Permit. Prior to the issuance of the permit, approval must be obtained from the Mecklenburg County Health Department and the Department of Environmental Protection (MCDEP). A National Emission Standard for Hazardous Air Pollutants ([NESHAP](#)) notification form is required to be submitted to Mecklenburg County Air Quality, in order to obtain an MCDEP approval. The form must be submitted at least ten days before any demolition begins. Required forms for demolition permits are a building permit application, address verification, Vector, and [NESHAP](#) forms. These forms may be found by clicking the links above or in the Mecklenburg County Code Enforcement Building.
4. **Renovation projects with the removal of asbestos:** It is a requirement to submit a [NESHAP](#) notification form to Mecklenburg County Department of Environmental Protection, for any renovation project in which the removal of asbestos is necessary. This form must be submitted at least ten working days prior to the start of any asbestos removal.
5. **Special Inspections:** Please refer to [meck-si.com](#) for comprehensive information relating to projects that require special inspections per Chapter 17 of the North Carolina State Building Code (NCSBC).

Note: The need for Special Inspection could dictate the number of "Umbrella" Permits and/or the delivery, phasing of a project.

6. **Preliminary Review:** All HCDT projects require a Preliminary Review before the actual design is submitted for permitting. To begin the process it is necessary for the customer to submit a Preliminary Review application, through the Electronic Plan Management system.
7. **Plan Review Applications for the HCDT Umbrella Permit:** The primary plan review system is called the On-Schedule review. It is necessary for the customer to submit an On-Schedule application through the Electronic Plan Management system to obtain an Umbrella Permit.
8. **Iterations:** Consist of Model Updates and deliverables. Customers submit for Model Updates and Deliverables by submitting an RTAP application, through the EPM system. Model updates can be design changes by customer, or changes requested in the field by code officials or contractors. Deliverables are phases or components of a project that need approval prior to construction, such as Footing and Foundation, Shell and Core, Upfit etc. All deliverables are required to have an LOD 300 or better. The RTAP application is used for scheduling plan reviewers, for iterations.
9. **Site Plans:** 100% site and civil drawings are required to be submitted and approved by all trades and agencies in order to issue the umbrella permit. The towns of DAVIDSON, HUNTERSVILLE and CORNELIUS perform their own zoning review. Customers shall have their Building Permit application forms signed off by the specific town's administrator, prior to the plans being submitted for review.
10. **Interactive Status:** A process of addressing plan review comments during an iteration submittal. A project gets placed on this status in order to facilitate designers to upload revisions based on redline comments, provided by the reviewers. An iteration will go through as many Interactive Status Cycles required to address all comments, for a particular submittal.
11. **Use of AE seals on BIM/IPD projects:** Documents are required to have embedded graphic signatures and seals on all the sheets during each submission of a deliverable. Any subsequent model update that captures field driven changes to the previously approved documents can bear a digital signature in lieu of the graphic seal and sign.
12. **Outside Agencies:** Please recognize that although we interact with some outside agencies, we have no control over other agencies work scheduling or requirements. It is the customer's responsibility to provide submittals and obtain their approvals before an umbrella permit can be issued.

Hybrid Collaborative Delivery Team- Integrated Project Delivery Process (at a Glance)



Hybrid Collaborative Step by Step Process

Step 1: Project Kick-off Meeting/ Phone Call:

The customer contacts the Hybrid Collaborative Delivery Team to determine the project's eligibility for the HCDDT plan review and permitting services. The customer will provide a general scope of the project. Based on the scope and information provided, the project manager will determine if the project qualifies for this service. If the project qualifies for BIM/IPD submittal, the client needs to upload a Preliminary Meeting Application to discuss projects with reviewers.

Step 2: Preliminary Meeting:

The following information is required/discussed during the Preliminary meeting:

1. Create an account at EPM (Electronic Plan Management) website (<http://epm.mecklenburgcountync.gov/>) and request to be scheduled for a preliminary meeting.
2. Agenda: Upload the agenda to the EPM Site. The agenda shall include the topics that the customer desires to discuss with code officials.
3. Project Overview:
 - a. The customer provides schematic diagrams related to project. Information can be in 2d DWF, and/or a 3d model (LOD100 or above).
 - b. Scoping letter (Detailed per trade) that clearly defines the scope of the entire project.
4. Contact list: The customer must provide the reviewers a contact list that contains the names of all the team players on the customers side that wish to be included in our communications plan.
5. Tentative permit dates, Project documents submission dates: The customer must be able to present a tentative timeline of deliverables/submissions (e.g. deliverable: footings and foundations - 06/20/2015).
6. Discuss method of permitting. Discussion of project phasing and Special Inspections if applicable.
7. Discuss document submittal format and gating procedure with the primary person of contact from the design team.
8. Discussion of upfront permitting fees and plan review fees. Plan review fees are based on the Mega Time system. Project Coordinator and Project Manager will explain the fee process. Fees will be dependent on the number of deliverables and the scope of the deliverables.
9. Follow Up: As a follow up to the preliminary meeting, the customer will upload meeting minutes to the EPM system for recordkeeping. The meeting minutes must list the projected number of deliverables for the project. The project can be broken down into as many deliverables as deemed necessary by the customer's team. Based on the number of deliverables, the HCDDT will provide estimated hours for plan review.

Step 3: Umbrella Permit Submission to EPM per NC Law and Admin Code Section 106.2.3.1:

Per the stated law, an Umbrella Permit can be requested upon presenting the concept or a schematic design of the project. The following information is required to be completed and uploaded to the EPM site, requesting an Umbrella Permit:

1. On-Schedule Application form.
2. Appendix B form signed, dated and sealed.
 - a. The Appendix B must contain sufficient information to analyze the scope of the project.
 - b. This document must be reproduced on the plan document (drawing sheet) that is submitted.
 - c. The Appendix B can be downloaded, under forms at
<http://charmec.org/mecklenburg/county/LUESA/CodeEnforcement/Tools/Architects-Engineers/Pages/default.aspx>
3. Building Permit Application: All contractors named on the permit application/s must be licensed and bonded to work in Mecklenburg County.
4. Address Verification form.
 - a. Addressing's website:
<http://webpermit.mecklenburgcountync.gov/default.aspx?PossePresentation=WebAddressVerificationSearch>
 - b. If not able to locate the address of the project, contact Addressing at 704.336.3745.
 - c. The form must be signed and dated
5. A scoping letter that clearly defines the scope of the entire project. This scoping letter will be used to approve the concept and the schematics of the project, for issuance of the Umbrella Permit. Scoping letter may be the same one used during the Preliminary Review, it contains detailed information about the project.
6. Submit other applications required by city and county agencies (ex. Backflow, Health, zoning, etc.)
7. Phasing plan if needed.
8. Letter of authorization: If you choose this as your payment option, you will need to upload a signed letter of authorization
9. Sheet Index: The sheet Index excel file must be downloaded from EPM , filled out with all the sheets that are being submitted for review along with any revision dates and numbers and then uploaded to EPM.
10. 100% complete Site Civil drawings (PDF) must be uploaded to EPM for review and approval by Fire, Building, Backflow, Zoning and any other affected trades. (**Note: This must be approved before any iterations are submitted for review**)

Step 4: Iteration

An iteration is a review cycle which occurs during one of the below listed situations:

1. The model is updated as part of a deliverable that has been previously identified during the preliminary meeting and needs approval prior to construction i.e. Footing and Foundation, Shell and Core, Interior Upfit etc. Submissions for deliverables are required to be at an LOD 300 or above.
2. The model is updated due to some changes requested by either the customer or the inspector in the field that might not have been previously identify during the preliminary meeting

3. The owner's team is requesting to update the model for any non-code related updates

The following documents will be required to be uploaded to the EPM during an iteration:

1. RTAP/Iteration Application: This must be uploaded to EPM ahead of package submittal
2. Scoping letter: A scoping letter identifying the changes in the model or requesting an approval for a deliverable must be emailed to the project coordinator when submitting the RTAP application. The scoping letter must clearly identify the nature of submittal, e.g. previously identified deliverable or model update driving by change. Scoping letter must give a detailed description of the deviation to the base model.
3. Review dates: Review time is estimated based on the scoping letter. Review dates will be subject to lead times and availability of reviewers. Please contact the HCDT project Coordinator ahead of time to check on lead times for review. Once your review is scheduled, you will need to accept the review dates in EPM.
4. For phasing submittal:
 - a. Building Permits for each phase
 - b. Phasing Plan identifying the different segments or phases of the project.
5. Sheet Index: The sheet Index excel file must be downloaded from EPM , filled out with all the sheets that are being submitted for review along with any revision dates and numbers and then uploaded to EPM.
6. Drawings:
 - a. 2D drawings (DWF files) and 3D model (Navis files) will have to be uploaded to the HCDT's Dropbox account. Contact the BIM Navigator to setup access to the drop box account.
 - b. Modifications/revisions must be clouded on each affected sheet and must be identified by the appropriate revision numbers and dates.
 - c. Appendix B must be submitted as part of the project documents for each iteration.
 - d. Notify Navigator when all files have been uploaded to drop box.

Step 5: Plan Review

1. Plan review will occur for each Iteration.
2. The review parameters shall be limited to the items listed in the scoping letter.
3. Review comments will consist of DWF files with the redline markups, and viewpoints from the 3D Navis Model.
 - a. Redline or reviewer comments will be returned to the customer on a daily basis, or on intervals agreed upon by the AE and the HCDT, during the Preliminary review.
 - b. Marked up drawings will be placed in the HCDT's Dropbox site, and an email will be sent to the AE, informing them to download the plan review comments.
 - c. Reviewers will communicate with the seal holders to discuss plan review comments.
 - d. If comments are marked as a tag/viewpoint on Navisworks 3D model during the plan review, clients need to address the comments in either of these two formats: either add a new TAG in the area that has been marked by the reviewer and add a new comment or change the status of the original comment to RESOLVED.

- e. When the designers have had a chance to revise their drawings and address all the plan review comments, the project will be placed on Interactive Status to facilitate the designers to upload the revised Sheet Index into the EPM system.
 - i. The sheet index cannot be deleted. A new Sheet Index will have to be uploaded, indicating a new revised date and revision number next to the affected sheets.
 - ii. The file name on the Sheet Index will remain the same, and the EPM system will identify it as an interactive file when it is resubmitted.
 - iii. A response letter, addressing all the plan review comments shall be uploaded to the Dropbox site.
- f. Revised drawings will be uploaded to the Dropbox site to be reviewed for compliance. This process will continue until all the comments are addressed by the seal holder.